

Claims

1. Titanium-zirconium alloy, suitable for the production of surgical implants, characterized in that this alloy (i) represents a binary alloy with a zirconium content of less than 25% by weight but more than 5% by weight and (ii) is hot forged and subsequently cold worked prior to processing into implants.
2. Titanium-zirconium alloy as claimed in Claim 1, characterized in that the zirconium content is less than 19% by weight (corresponding to 11 atomic %) but more than 10% by weight (corresponding to 5.5 atomic %).
3. Titanium-zirconium alloy as claimed in Claim 1 or 2, characterized in that the zirconium content is 14 – 15% by weight.
4. Titanium-zirconium alloy as claimed in one of Claims 1 – 3, characterized in that it comprises up to 1% by weight of strength enhancing additives and technical impurities as well as possibly up to 0.5% by weight hafnium as impurity of zirconium.
5. Titanium-zirconium alloy as claimed in Claim 4, characterized in that it comprises 0.1 to 0.3% by weight oxygen as strength enhancing additive.

6. Use of the titanium-zirconium alloy as claimed in one of Claims

1 – 5 for the production of implants in dental surgery, abutments and elements for suprastructures.

7. Process for the production of the alloy as claimed in one of Claims

1 – 6, characterized in that the forging process is carried out at temperatures above 850° C, the alloy is then cooled rapidly and subsequently cold worked.

8. Process for the production of the alloy as claimed in Claim 7,

characterized in that the forging process is carried out in the range of alpha/beta phase transition at 770° C to 830° C, the alloy is then cooled rapidly and subsequently cold worked.

9. Surgical implants produced from a titanium-zirconium alloy as claimed in Claims 1 – 5.

10. Implants for dental surgery, abutments and elements for suprastructures as claimed in Claim 9.